Auto Judge

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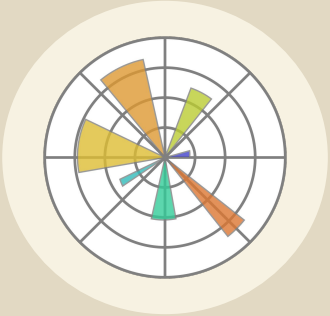
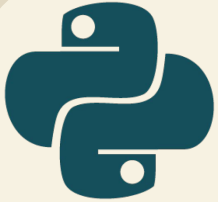
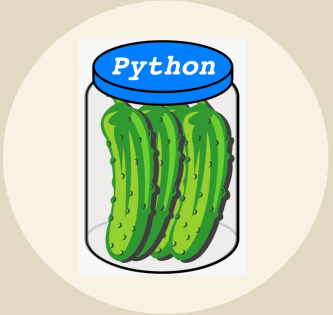
INTRODUCTION

- Unsupervised model to Match similar court cases.
- Supervised Model to predict the judgment results.

TOOLS





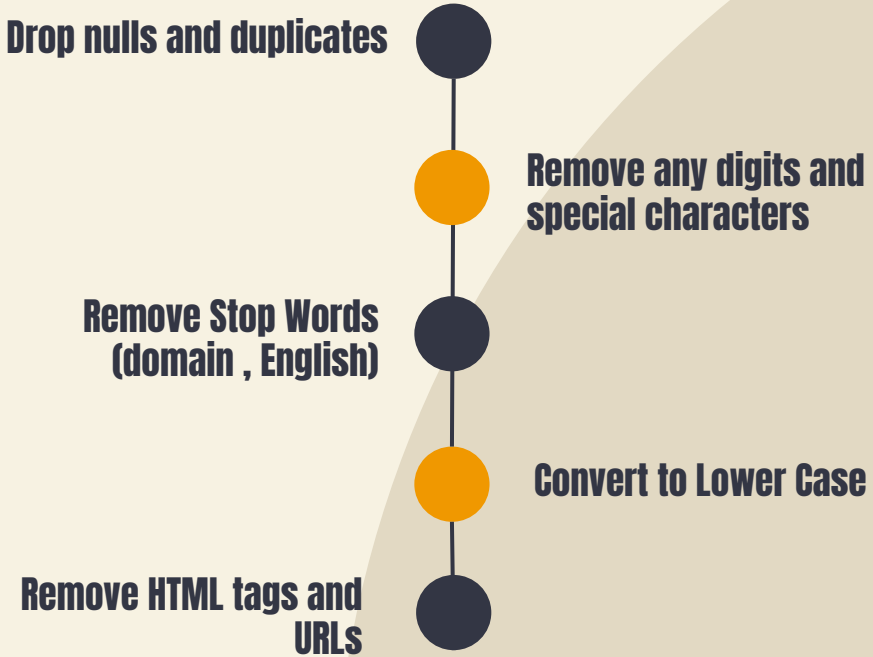


DATA STORY

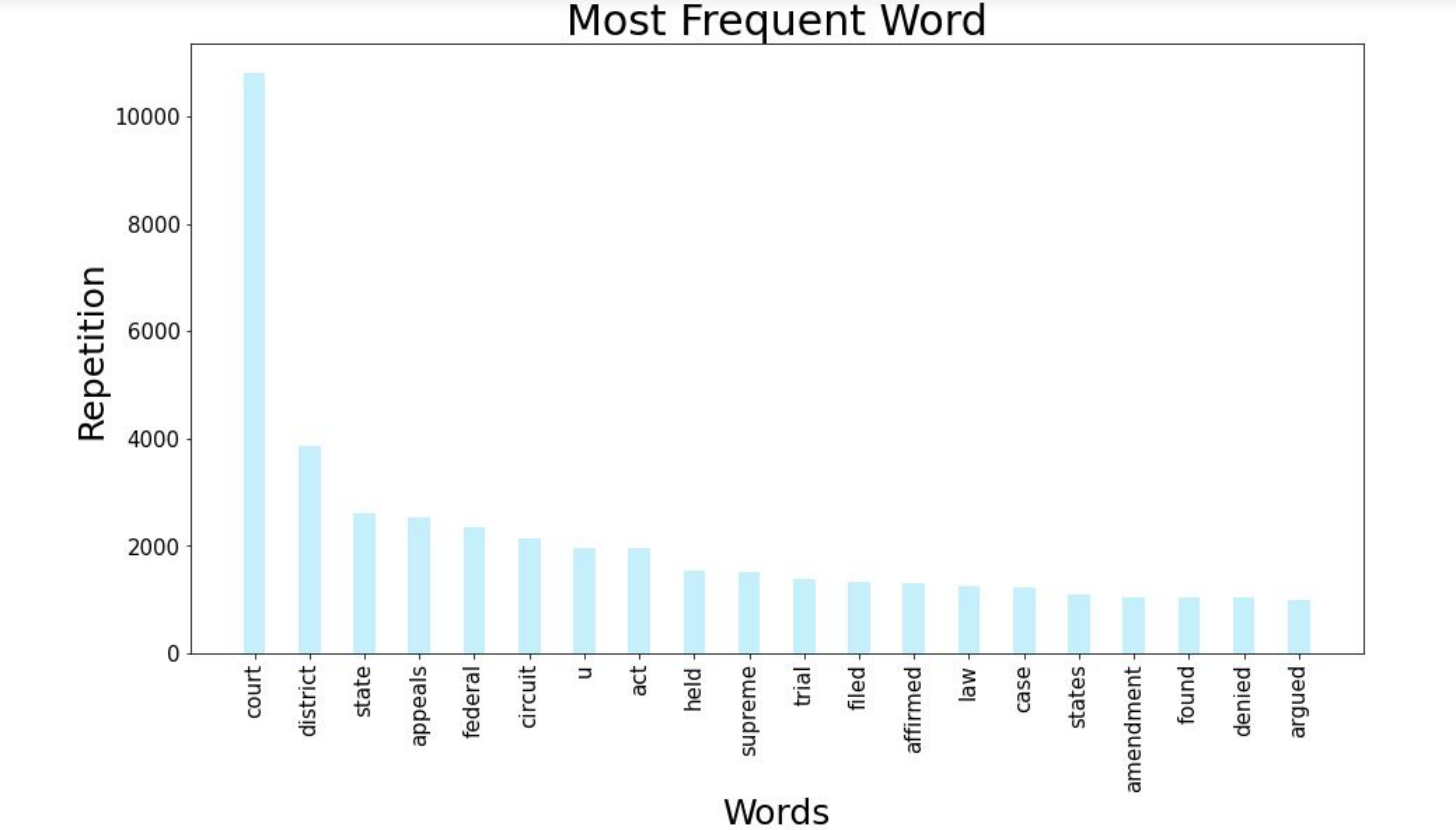
Data Size :
3304 row
15 columns

Data Source :
from the Supreme Court of the United States from 1955 to 2021 (Kaggle)

Data preprocessing



WORD FREQUENCY



Topic Modeling

- LDA ✗
- LSA ✗
- NMF ✗
- Corex ✓

The Final Topics :

1. First Amendment Cases
2. Tax-related court cases
3. Criminal cases
4. Political court cases
5. Domestic violence (family law)
6. Immigration Cases
7. Labor Union Cases
8. privacy rights cases

Topic Modeling

First Amendment court cases	speech	religious	freedom	free	nonreligious	religion	amendment	establishment
Tax-related cases	tax	income	bankruptcy	revenue	taxes	paid	refund	retirement
Criminal cases	guilty	arrested	prison	killed	convicted	sentenced	murder	trial
Political cases	election	voters	voting	candidates	vote	elections	redistricting	school
Domestic violence	mother	Son	father	beaten	threatening	child	died	parents
Immigration cases	immigration	nationality	deported	citizen	deportation	states	united	removal
Labor Union cases	company	labor	union	companies	employees	workers	relations	agreement
privacy-related cases	private	privacy	clean	public	agency	magazines	scandal	land

Supervised Learning

- Logistic Regression ✗
- KNN ✗
- Naive Bayes ✗
- MLP ✗
- SVM ✗
- Ensamble ✓

The best model is the (Ensemble Model)
With Accuracy testing Score : 0.78

Supervised Learning

- The following is a demo for predicting the case judgment

```
out = predict('Jake', 'John', 'John was assaulted by Jake at gun point.')
print(f'Expecting 1 but got {out}')
```

```
Expecting 1 but got 1
```

Future Work

- Improve our model to be more accurate
- Include more cases.
- Web Application.

THANKS!